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sult in the formation of irregular chimneys of sand in such clays. This hypothesis appears to require so exceptional conditions as to be almost irreconcilable with the wide distribution of the mounds. J. A. UDDEN.

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May 15, 1906.

#### SPECIAL ARTICLES.

##### RECENT EARTHQUAKES RECORDED AT ALBANY, N. Y.

UNDER the direction of Dr. John M. Clarke, state geologist, a seismograph has been installed at Albany, N. Y., and was placed in operation early in March, this year. The instrument belongs to the Bosch-Omori horizontal-pendulum type. It is mounted on a concrete pier in the basement of Geological Hall. Special care has been taken to isolate the pier, so far as practicable, and to protect the instrument from artificial disturbances. There are two pendulums which record the north-south and east-west components of motion. The elevation above sea level has not been determined, but it is somewhat less than 100 feet.

Up to April 22, three seismic disturbances had been recorded, one on April 10 and two on April 18, the date of the destructive earthquake at San Francisco.

##### 1. April 10, P.M.<sup>1</sup>

|                           | East-West<br>Comp. |    |    | North-South<br>Comp. |    |    |
|---------------------------|--------------------|----|----|----------------------|----|----|
|                           | h.                 | m. | s. | h.                   | m. | s. |
| Beginning,                | 4                  | 29 | 15 | 4                    | 29 |    |
| Beginning principal part, | 4                  | 41 |    | 4                    | 41 |    |
| End principal part,       | 4                  | 46 |    | 4                    | 42 | 30 |
| End,                      | 5                  | 27 |    | 4                    | 58 |    |
| Maximum amplitude,        | 35 mm.             |    |    | 25 mm.               |    |    |
| Period of maximum waves,  | 24                 |    |    | 17                   |    |    |

##### 2. April 18, A.M.

|                           | h.     | m. | s. | h.     | m. | s. |
|---------------------------|--------|----|----|--------|----|----|
| Beginning,                | 8      | 21 | 30 | 8      | 21 | 30 |
| Beginning principal part, | 8      | 32 | 30 | 8      | 33 |    |
| End principal part,       | 8      | 42 |    | 8      | 42 |    |
| End,                      | 11     | 05 |    | 9      | 37 |    |
| Maximum amplitude,        | 48 mm. |    |    | 65 mm. |    |    |
| Period of maximum waves,  | 20     |    |    | 18     |    |    |

##### 3. April 18, P.M.

|                    | h.      | m. | s. | h. | m. | s. |
|--------------------|---------|----|----|----|----|----|
| Beginning,         | 7       | 48 | 30 | 7  | 48 |    |
| End,               | 8       |    |    | 7  | 57 |    |
| Maximum amplitude, | 0.1 mm. |    |    |    |    |    |

<sup>1</sup> Eastern standard time.

The multiplying ratio of the pointers was twelve on April 10 and ten on April 18. The period of both pendulums was about 30 s. The instrument has been in good working order since its installation, though on April 10 the east-west pointer (registering north-south component) showed an abnormal displacement due probably to its being in slightly unstable equilibrium. The displacement was coincident in time with the arrival of the larger waves. Again on April 18 (A.M.) the record made by the same pendulum showed a greater amplitude for the maximum wave than that registered by the north-south pendulum, but this was apparently due to the seismic disturbance itself, as the preceding and subsequent waves on the former record were much smaller.

It is interesting to note that the duration of the preliminary tremors was about the same in the earthquake of April 10 and in the larger one of April 18, which, if the former came from the west, as seems probable, would indicate that the two had a common origin.

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##### PARAPHYSES IN THE GENUS GLOMERELLA.

ATKINSON was probably the first investigator to obtain a perfect or ascigerous stage from a species of *Glaesporium*. Stoneman, one of his students, continued this line of investigation, and, as a result of her studies, described a new genus which she called *Gnomoniopsis*, containing five species, one of which was considered doubtful. She did not happen to obtain the ascigerous stage from what was then known as *Glaesporium fructigenum* (*Glomerella rufomaculans*), although she grew it in cultures, but Clinton did about four years afterward, and several other investigators have since, among them being Spaulding and von Schrenk, who changed the name of Stoneman's genus from *Gnomoniopsis* to *Glomerella*.

With the exception of Stoneman's doubtful species, there is no evidence that any of these investigators saw anything suggesting paraphyses. On the contrary, Clinton says in his bulletin on the rots of apples, 'There was no

sign of paraphyses,' and Spaulding and von Schrenk in describing the genus *Glomerella* say that it is 'aparaphysate.'

In some cultures of a *Glæosporium* from guavas the writer obtained an ascigerous stage much like the one described for *Glomerella rufomaculans*. The essential difference noticed at the time was the presence of paraphyses, which *G. rufomaculans* was not supposed to have. The repeated occurrence of paraphyses in the ascigerous stages obtained from *Glæosporiums* and *Colletotrichums*, from other sources besides the guavas, suggested the possibility that *G. rufomaculans* might also be paraphysate. Cultures of this fungus, isolated from a Baldwin apple, produced perithecia containing long, slender paraphyses, apparently identical with those obtained from the other cultures referred to. Besides the paraphyses obtained by means of artificial cultures, others were obtained when conidia of a *Glæosporium* were inoculated into rose canes; they have also been found in perithecia growing naturally in the leaves of a species of *Dracæna*.

In general, the paraphyses from the different sources were long, slender, tapering, and more or less wavy. They were usually more abundant at the time when the asci were developing, but were often present with the mature asci. Like the asci, they were somewhat fugacious.

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#### CURRENT NOTES ON METEOROLOGY.

##### KITE-FLYING OVER THE ATLANTIC.

REFERENCE was recently made in these 'Notes' to some of the results of the investigation carried out last summer over the North Atlantic under the direction of Messrs. A. Lawrence Rotch and Teisserenc de Bort. A second report on this expedition is published in *Nature* for March 8 and deals chiefly with the kite results. Mr. H. H. Clayton's study of the data collected in the tropics points to the existence of three strata between sea level and 4,000 meters. The trade, about 1,000

meters in thickness, is damp; usually carries cumulus or strato-cumulus clouds in its upper portion, and varies between north and east in direction. Above the surface trade is a current about 2,000 meters in depth, varying between northeast and northwest, but coming always from a direction to the left of the lower wind when facing it. This second current is very dry, and potentially warm, and its velocity is usually much greater than that of the lower wind. The third stratum begins at a height of about 3,000 meters; comes from a direction between east and south or southwest, being generally from the east in equatorial regions and from the south between latitudes 15° and 30° N.

##### METEOROLOGISCHE ZEITSCHRIFT.

THE numbers for February and March of the *Meteorologische Zeitschrift* contain articles of special interest as follows: 'Cirrus Studien,' a detailed study of cirrus movements, by Professor Klein; 'Der Pulsschlag der Atmosphäre,' by Hann, containing comments on Dr. W. N. Shaw's recent article in *Nature*, December 21, 1905; a very interesting, unique, graphic representation, by S. Zöllner, of the daily insolation in different months and latitudes, undertaken at the suggestion of von Bezold; a summary by Hann of the meteorology of the north polar basin, based on the results of the Nansen expedition; a further study of cirrus, especially of the cirrus cap over cumulus, by M. Möller; a brief discussion of the warm wave of January 20-24 last, in the eastern United States, by Dr. S. Hanzlik.

##### CLEAN AIR AFTER THUNDERSTORM.

IN a recent number of *Nature* (March 22, 1906) Mr. John Aitken notes the effect of a thunderstorm rain in bringing clean air. While making some meteorological observations with his dust-counter on the Eiffel Tower, at Paris, a heavy thunder-shower occurred. Before the rain the number of dust particles was large and showed that the impure air of the city came up in great quantities to the top of the tower. After the shower the number of dust particles was so